

# The Effect of Teacher's Feedback on Student Academic Achievement: A Literature Review

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## Abstract

The role of teacher's feedback in the teaching and learning process is extremely important as it allows educators to provide an objective assessment of a student's performance and help them improve their academic achievements. In this paper, the findings of a comprehensive literature review, conducted using the PRISMA methodology, encompassing 19 studies from 2013 to 2023 are presented. These studies evaluated the impact of teacher feedback on students' academic performance across all levels of education. It was observed that the majority of the research focused on English as a second and foreign language, academic writing, and higher education. The data collection method employed in these studies was action research. The results indicated that the provision of various forms of teacher's feedback significantly contributed to enhancing students' academic performance, improving their language skills, and refining their academic writing abilities.

**Keywords:** teacher's feedback, types of feedback, academic performance, school education, higher education

## 1. Introduction

Feedback from teachers refers to the information, guidance, and feedback they provide to students about their academic performance, progress, and learning outcomes (Hattie & Timperley, 2007; Shute, 2008). It is a crucial part of the educational process and plays a critical role in promoting students' learning development and academic performance (Kluger & DeNisi, 1996). The relationship between teacher feedback and the revision of student work is a critical aspect of the learning process (Narciss, 2008). Revision involves reviewing, modifying, and improving academic work, usually in preparation for assessments, examinations, or to enhance overall understanding and knowledge of a subject (Allal et al., 2009; Chanquoy, 2009). Academic achievement of students refers to the measurement and evaluation of a student's learning and achievement in various subjects or disciplines (Brown et al., 2020). It encompasses a student's knowledge, skills, and abilities related to curriculum and educational standards (Williams, 2017).

There have been numerous studies examining the impact of teacher feedback on student academic performance. However, these studies either focus on specific types of feedback and their general impact on student performance or on the cognitive, social-emotional, and metacognitive domains of performance (Kluger & DeNisi, 1996; Hattie & Timperley, 2007; Shute, 2008; Harker & Kokotsaki, 2017; Wisniewski, Zierer, & Hattie, 2020).

Previous reviews have provided valuable insights into different types of feedback, their application, and their impact on learner learning and performance. However, none have specifically explored the link between feedback, revising learners' work, and its influence on academic performance. This work focuses specifically on this connection as its primary objective.

## 2. The Effect of Teacher Feedback on Student Academic Performance: A Theoretical Approach

Feedback refers to the objective description of a learner's performance, which is intended to guide future performance (Narciss, 2008). It involves helping learners evaluate the quality of their performance and identify if they have met their goals, while also giving them advice on how they can improve in the future (Hattie & Timperley, 2007; Shute, 2008). Feedback gathers information about a learner's efforts and the gap between their actual and desired levels (Kluger & DeNisi, 1996; Shute, 2008). Its primary purpose is to help learners adjust their thinking and behaviors to achieve improved learning outcomes and successfully reach their goals (Shute, 2008; Chappuis et al., 2012).

Many researchers argue that feedback, depending on its use, is distinguished into a) informal, b) formal, c) formative, d) summative, e) peer feedback, f) self-feedback, g) constructive, h) oral and written, i) evaluative and descriptive and j) online-electronic (Kluger & DeNisi, 1996; Hattie & Timperley, 2007; Narciss, 2008; Chappuis et al., 2012; Graham et al., 2015).

The feedback given by teachers to learners is a result of their performance. It can be related to mistakes or their overall performance (Hornby, 2005). The primary purpose of this feedback is to enhance the learner's academic performance and stimulate their internal motivation (Reader & Wise, 2020). Academic performance encompasses the actions and activities carried out by the learner using the information acquired during the course (Walberg & Tsai, 1983). This process is oriented towards the learner's learning and development (Konstantinou, 2000). It involves evaluating the learner's performance in various academic tasks, such as tests, exams, assignments, projects, and overall grades (Konstantinou, 2000), and is influenced by the learner's characteristics and the environmental factors they encounter (Dennis et al., 2005). Through motivation, academic performance acquires significance beyond just being the result of the educational process (Kapsalis, 2004).

### 3. Purpose and Research Questions

The primary aim of this research is to use a literature review methodology to explore how teacher feedback influences learners' academic performance across all levels of education. We have analyzed nineteen internationally published research papers from 2013 to the present. The main research question we seek to address is: What is the impact of teacher feedback on enhancing learners' academic performance? The potential benefits of this research could be significant, leading to improved teaching practices and student outcomes. The specific research questions to be addressed are:

- a) What are the findings of the reviewed research regarding the impact of teacher feedback on learners' academic performance?
- b) Which types of feedback are most effective in improving learners' academic performance?
- c) In which subjects were the reviewed investigations conducted on the impact of teacher feedback on student academic performance?
- d) What was the methodological design of the examined studies?

### 4. Previous Systematic Literature Review Studies

Baliram and Youde (2018) conducted a study to explore the impact of feedback on the academic achievement of primary school students. Initially, they identified 419 studies conducted between 1960 and 2017. After applying specific meta-analysis criteria, they narrowed down the search to eight studies from which they extracted data sets for comparative analysis. The results indicated that the feedback provided by teachers with specific content had a statistically significant positive effect on students' academic performance.

In Yaseeni's (2021) study, the main goal was to identify suitable strategies for giving written feedback to learners and to document the impact of these strategies on learners' academic writing performance in English as a foreign language. The systematic literature review yielded twenty articles. The analysis revealed four key findings: a) Effective written feedback helps train independent writers, b) There are various models for providing written feedback, c) Students do not value vague and delayed feedback, d) Direct feedback is used in intermediate level classes, while indirect feedback is used in advanced level classes.

The study conducted by Cai et al. (2023) aimed to investigate the impact of teacher feedback on the academic achievement of students in a technological learning environment. The study focused on three main aspects: a) the effectiveness of feedback in improving learning performance, b) the factors contributing to inconsistent findings across various studies, and c) the differences in the effects of various types of feedback on academic performance. This systematic review, covering the period from 1988 to 2021, identified 61 relevant studies. The results of the review indicated a moderate positive effect of feedback on academic performance, particularly when compared to the absence of feedback. Additionally, the study found that expository feedback was more effective than other types of feedback, and that a combination of live and electronic feedback was more effective than providing only electronic feedback.

### 5. Methodology

The current research review was methodologically based on the PRISMA 2020 (Preferred Reporting Items for Systematic reviews and Meta-Analyses) model by Page and colleagues (2021). This is an updated guideline for reporting systematic reviews, which replaces the 2009 model. It includes new reporting guidance, with stages including identification, screening, and final selection of studies (Figure 1).

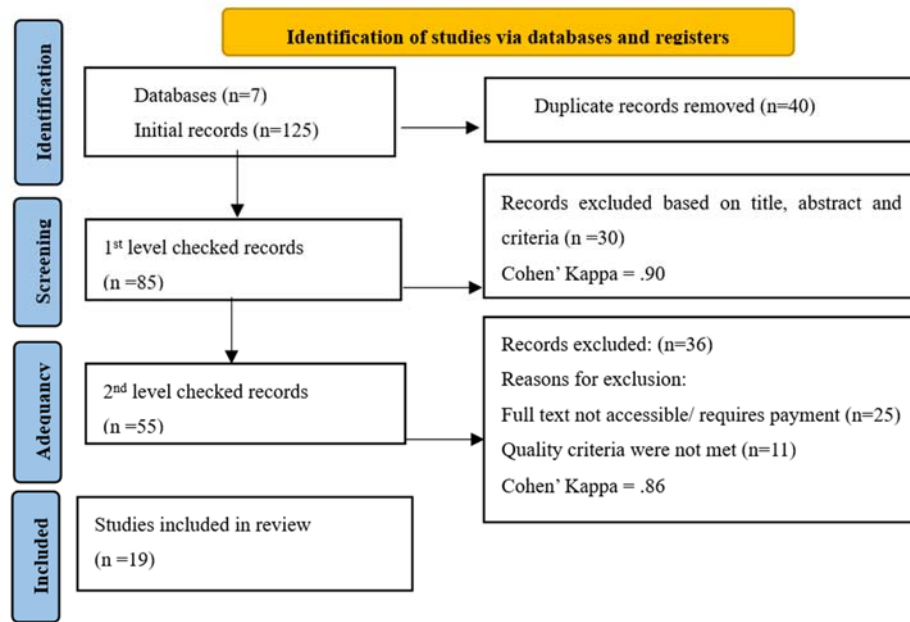


Figure 1. Flowchart of the literature review

The following keywords or phrases were used for the search: “Feedback” AND “Students’ Academic Performance” OR “Students’ Academic Achievement” OR “Teacher’s Feedback” AND “Students’ Academic Performance” AND “Students’ Academic Achievement”, OR “Feedback” AND “Students’ Academic Performance” AND “Students’ Academic Achievement” AND “Education””. The search was conducted using English terms, as most of the literature in this field is published in English. Additionally, no relevant results were found when using Greek terms for the search. In choosing the terms, initially used “Feedback,” “Academic Performance,” and “Academic Achievement” to narrow down the entries to research related to the feedback and performance of trainees. We also included “Students’ Academic Performance” and “Students’ Academic Achievement” to focus on research related to these terms. However, since much research was related to other scientific fields, we added the term “Education” along with “Feedback,” “Students’ Revision,” and “Students’ Academic Achievement.” Additionally, we used the asterisk symbol to include as many studies as possible containing terms with the same letters. The review utilized several bibliographic databases including IEEEExplore, SAGE Journals, ScienceDirect, SpringerLink, Google Scholar, Scopus, and ResearchGate. This approach was chosen to expand the search compared to previous systematic reviews in the field. IEEEExplore and Scopus, two comprehensive databases covering a wide range of topics, were included. Additionally, ScienceDirect and SpringerLink, encompassing relevant topic sections in social sciences and humanities, along with SAGE Journals and ResearchGate, were searched. Despite its limitations in search capabilities, Google Scholar was also utilized. The search of the databases mentioned above yielded 125 studies. Out of these, 40 duplicate studies were identified and removed. The remaining 85 studies underwent a meticulous level 1 screening, where titles and abstracts were rigorously analyzed against the selection criteria (Table 1). This rigorous process, aimed at ensuring the internal consistency of the procedure, involved evaluating a small number of the same surveys and calculating Cohen’s kappa coefficient (Figure 1). As a result of this thorough screening, 30 surveys were excluded, further demonstrating the rigor of the review process.

Table 1. Criteria for inclusion/exclusion of studies in the review

Inclusion criteria	Exclusion criteria
Studies written in English and Greek.	Studies written in a language other than English.
Application in the field of education.	They do not concern the field of education.
Report on the effect of feedback on the academic performance of learners.	They do not address the effect of feedback on learners’ academic performance.
The summary states some information.	Reviews/theoretical studies
Publication year from 2013–2023	

The 55 remaining studies underwent level two screening, during which their main text was examined. Out of these, 25 surveys required payment for access, and were therefore excluded. The quality of the remaining 30 studies was evaluated based on the following criteria:

- The research clearly outlines the impact of feedback on students' academic performance, including the cognitive domain and type of research.
- The research clearly explains the methodological design used, including the type of data collected and the participant sample.
- The research clearly describes the data collection method and research tools used.

After completing this process, 19 studies were carefully chosen for the systematic review, each of which satisfied all three criteria mentioned above. Additionally, the consistency of the procedure was assessed by calculating Cohen's kappa coefficient (Figure 1).

## 6. Results

Tables 2, 3, and 4 present the research examined in primary, secondary, and higher education, respectively, as identified by the literature search on the effect of teacher feedback on learners' performance. The tables provide information on each research under review, including the researcher/s, time and country of implementation, purpose, type of research, sample size, course, and results.

Table 2. Results of the effect of teacher feedback on learners' performance in primary education

<b>Researchers Year Country</b>	<b>Purpose of research</b>	<b>Type of research Sample size Subject</b>	<b>Results</b>
Noureen 2013 Pakistan	Studying the impact of descriptive and corrective feedback on students' performance in Mathematics.	Action research 159 students Mathematics	Students who received descriptive feedback outperformed those who received corrective feedback. Students who received corrective feedback showed improved math performance compared to those who did not receive feedback.
Siebert, Wong, Wei & Zhou 2018 China	Studying the impact of feedback on student academic performance.	Mixed 4,000 students Language, Mathematics	Using a specific homework and behavior scorecard to provide feedback to students resulted in improved student performance.

Table 3. Results of the effect of teacher feedback on learners' performance in secondary education

Researchers Year Country	Purpose of research	Type of research Sample size Subject	Results
Ahmad, Saeed & Salam 2013 Pakistan	Examining the effects of corrective feedback on student academic achievement.	Quantitative 200 teachers from 20 schools All courses	Students who received corrective feedback improved their performance, raised their grades, and developed the skills of understanding concepts, participation, and communication.
Tampal, Betasolo, Cumpa, Segundo, Apalisok & Ablen 2019 Philippines	Investigating the effects of feedback on student academic performance and behavior.	Mixed 10 students 5 men and 5 women All courses	Giving feedback has an impact on students' academic performance, behavior, and overall progress.
Eleje, Esomonu, Okoye, Agu, Ugorji, Okoi & Abanobi, 2020 Nigeria	Investigation of the effect of teacher feedback on student academic achievement.	Action research 164 students Economics course	Providing feedback significantly enhanced academic performance in the Economics course.
Peng 2021 Taiwan	Examining the impact of different kinds of feedback on student beliefs and performance.	Action research 120 students 60 men 60 women Language	Students' learning motivation and academic performance are positively influenced by teacher feedback, in contrast to self-feedback.
Molin, Haelermans, Cabus & Groot 2021 Netherlands	Investigating how different feedback strategies during formative assessment using polling technology affect learning outcomes.	Action research 527 students 252 women, 275 men Physics	Teacher's feedback had a positive impact on student learning achievement, regardless of peer discussions.
Fadzil & Said 2021 Malaysia	Exploring how oral feedback is perceived and how it can improve ESL learners' language abilities from teachers' perspectives.	Qualitative 10 teachers English as a second language	Oral feedback is generally perceived positively. In addition, listening to teachers' feedback improved students' language ability.
Fahmi, Ashfaq, Noor, Basit & Basit 2022 Pakistan	Determining the extent to which giving students feedback on their work improved their grades.	Mixed 40 female students English as a foreign language	The teacher feedback had a largely positive impact on the students' academic performance, leading to an improvement in their grades.
Patra, Alazemi, Al-Jamal & Gheisari 2022 Iran	Investigating the impact of teachers' written and oral corrective feedback on students' academic anxiety and performance.	Mixed 76 students English as a foreign language	Teachers' written and verbal corrective feedback had a positive impact on the students' academic performance, as it significantly reduced their anxiety levels.

Table 4. Results of the effect of teacher feedback on learners' performance in higher education

Researchers Year Country	Purpose of research	Type of research Sample size Lesson	Results
Denton 2014 USA	Studying how giving electronic feedback impacts students' academic performance in their written assignments.	Qualitative 36 undergraduate students Academic writing	The online feedback effectively guided the corrections in a written assignment.
Morris & Chikwa 2016 UK	Investigating the impact of oral and written feedback on students' academic performance and their preferences.	Mixed 68 undergraduate students Academic writing	Neither oral nor written feedback affected trainees' grades on their next assignment, but learners preferred written feedback.
Zimbardi, Colthorpe, Dekker, Engstrom, Bugarcic, Worthly & Long 2017 Australia	Investigating the impact of electronic feedback on students' academic performance and its influence on learning.	Mixed 38 undergraduate students All courses	Electronically provided feedback, along with the amount of time learners dedicate to it, enhances their academic performance.
Wang & Zhang 2020 China	Determining how student academic achievement is affected by the interaction of learning engagement and teacher feedback.	Mixed 2,458 undergraduate students All courses	Teacher feedback has a positive impact on students' academic performance. Additionally, it indirectly affects students' academic performance by promoting their learning engagement. It is most effective when the frequency, difficulty, or variety of assessments is high.
Yamalee & Tangkiengsirisin 2019 Thailand	Studying the impacts of integrative feedback on students' writing performance.	Action research 60 undergraduate students Academic writing	Providing comprehensive feedback improved learners' writing. Learners applied integrative feedback positively to enhance their writing ability.
Baranczyk & Best 2020 USA	Investigating the impact of teacher feedback on students' academic performance.	Action research 217 undergraduate students Psychology	Learners' initial performance can impact how teacher feedback affects their subsequent academic performance. Providing feedback helped low-scoring learners improve their performance, while high-scoring learners declined after receiving specific, but not general, feedback.
Wahyuningsih 2020 Indonesia	Investigating the impact of corrective feedback on students' academic performance in written exams.	Qualitative 6 undergraduate students English as a foreign language	The provision of corrective feedback significantly contributed to the academic writing performance of learners.
Mackinney, Kelly & Pulling 2021 USA	Investigating the impact of written, auditory, and face-to-face feedback on undergraduate students' academic performance.	Action research 91 undergraduate students Physical education	Written feedback had a lesser impact on the learners' academic performance compared to auditory and face-to-face feedback, which resulted in a significant improvement in their academic performance.
Younis, Imdad & Rahman 2021 Pakistan	Investigating the effects of summative and timely feedback on academic performance and exploring learner learning experiences.	Action research 151 undergraduate students 25 men, 116 women Nursing courses	The teachers' provision of summative feedback improved learners' academic performance through clear communication and learning objectives.

The research selected is based on journal articles. It's also important to note that all the investigations were conducted internationally, with none taking place in Greece. Figure 2 illustrates the number of surveys conducted each year.

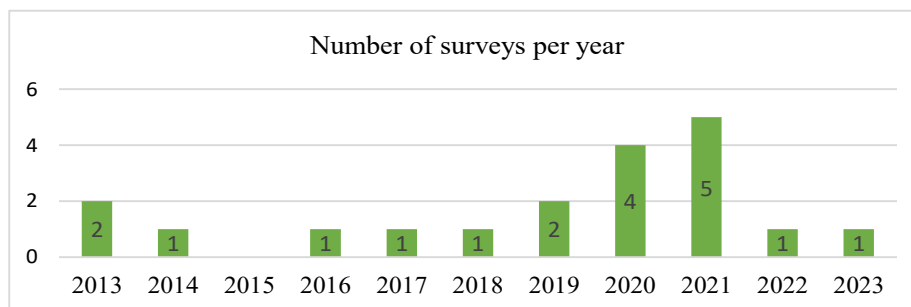


Figure 2. Number of surveys per year

The majority of the studies (n = 12) were conducted in Asian countries, with four studies from Pakistan, two from China, and one each from Indonesia, the Philippines, Taiwan, Iran, Malaysia, and Thailand. The USA contributed three investigations, while the United Kingdom and the Netherlands each had two investigations. One investigation was conducted in Nigeria, Africa.

Regarding the research type, most researchers used action research (n = 8) and mixed methods (n = 7), while very few used qualitative (n = 3) and quantitative data collection methods (n = 1). In the survey sample, the majority of surveys were conducted with 101 to 500 participants (n = 6), followed by surveys with 51 to 100 people (n = 4), more than 500 people (n = 3), 31 to 50 people (n = 3), and 1 to 10 people (n = 3). It's worth noting that four surveys provided data on the proportion of men and women in the survey sample, which is an important aspect of the research. Regarding education levels, most research was found in tertiary (n = 9) and secondary (n = 8) education, with very few found in primary education (n = 2).

In primary education, two studies were identified that investigated the impact of teacher feedback on improving academic performance in Language and Mathematics subjects. Table 5 presents the results of these surveys.

Table 5. Results of research in primary education on the effect of feedback on improving the academic performance of learners

Results	Frequency in surveys
The effectiveness of descriptive feedback in improving student achievement in Mathematics was found to be greater than that of corrective feedback.	1
Students who received corrective feedback showed improved Math performance compared to students who did not receive feedback.	1
Providing students with feedback using a specific homework and behavior scorecard led to improved performance in Math and Language.	1

Eight studies focusing on secondary education were found, which explored the impact of teacher feedback on enhancing students' academic performance. Among these, three studies were conducted in the context of English as a second or foreign language courses, two studies were related to general courses, and three studies were associated with Physics, Language, and Economics courses, respectively. The results of these surveys are presented in Table 6.

Table 6. Results of research in secondary education on the effect of feedback on improving the academic performance of learners.

Results	Frequency in surveys
The provision of feedback from teachers has a significant impact on improving student academic performance.	5
Students who received corrective feedback improved their performance and developed social skills.	2
Oral feedback had a positive impact on students' academic performance.	2
Students who received feedback showed a significant improvement in their final scores.	2
Teacher feedback has a positive impact on student motivation and academic performance compared to self-feedback.	1
Oral feedback significantly improved the students' language ability.	1
Written feedback had a positive impact on students' academic performance.	1

In higher education, nine studies were identified that investigated the effect of teacher feedback on improving student academic performance. From these studies, three focused on academic writing, two on general courses, and one each on English as a second language, physical education, nursing, and psychology. Table 7 presents the results of these surveys.

Table 7. Results of research in higher education on the effect of feedback on improving the academic performance of learners

Results	Frequency in surveys
The effect of teachers' feedback on enhancing students' academic performance was significant.	7
The contribution of electronic feedback significantly improved the academic performance of the learners.	2
The provision of corrective feedback significantly impacted the academic writing performance of students.	1
Providing feedback helped students improve their writing skills.	3
Summative feedback has significantly contributed to improving learners' academic performance through clear communication and learning objectives.	1
Oral feedback has been shown to be a powerful tool, leading to a significant improvement in learners' academic performance.	1
The grades of the learners were not influenced by either oral or written feedback.	1
Teacher feedback indirectly influences students' academic performance by encouraging their engagement with learning.	1
The initial performance of learners significantly influenced the effectiveness of teacher feedback on their later academic performance.	3
Written feedback had a minimal impact on the academic performance of the learners.	2

## 7. Discussion

Research conducted between 2013 and 2023 showed that there were no studies in Greece ( $n = 0$ ) regarding the impact of teacher feedback on students' academic performance, whereas there were 19 studies conducted internationally. The majority of these studies were carried out in Asia ( $n = 12$ ), followed by America ( $n = 3$ ), with fewer studies in Europe ( $n = 2$ ), Africa ( $n = 1$ ), and Oceania ( $n = 1$ ). In terms of countries, Pakistan ( $n = 4$ ) and the USA ( $n = 3$ ) had the highest number of studies on this topic.

The research studies mainly used action research methodology ( $n = 8$ ), followed by mixed methods ( $n = 7$ ) and qualitative approaches ( $n = 3$ ), with one study using quantitative methods ( $n = 1$ ). In terms of sample size, most studies involved 101 to 500 participants ( $N = 6$ ), followed by studies with over 500 participants ( $n = 3$ ), 51 to 100 participants ( $n = 3$ ), 31 to 50 participants ( $n = 3$ ), and 1 to 10 participants ( $n = 3$ ). The sample sizes for action research ranged from 60 to 527 participants, for mixed methods from 10 to 4,000 participants, for qualitative methods from 6 to 36 participants, and for quantitative methods, 120 participants. The majority of research related to this paper's questions was conducted in higher education ( $n = 9$ ), followed by secondary education ( $n = 8$ ), and finally, primary education with the fewest research studies ( $n = 2$ ).

Two international studies in primary education have investigated the impact of teacher feedback on student achievement. One study in Pakistan focused on Mathematics while the other in China looked at Language and Mathematics. In the first study by Noureen (2013), the experimental groups that received descriptive and corrective feedback showed significant improvement in Mathematics compared to the control group, which did not receive feedback. The group that received descriptive feedback showed the greatest improvement in academic performance. In the second study by Siebert et al. (2017), providing feedback to students using a specific task and behavior scorecard led to improved student performance in both Mathematics and Language.

Eight studies were conducted to examine the impact of feedback on enhancing students' academic performance in secondary education. Three surveys focused on English as a second language and as a foreign language course, two surveys encompassed all general subjects, and one survey specifically looked at the subjects of Physics, Language, and Economics. The majority of the research indicated a significant positive effect of teacher feedback on improving students' academic performance (Tampal et al., 2019; Peng, 2021; Molin et al., 2021; Fahmi et al., 2022; Patra et al., 2022). Some studies also demonstrated that students notably improved their final scores (Ahmad et al., 2013; Fahmi et al., 2022). In terms of the types of feedback, both corrective (Ahmad et al., 2013; Patra et al., 2022), oral (Fadzil & Said, 2021; Patra et al., 2022), and written feedback (Patra et al., 2022) were found to significantly enhance students' academic performance, whether in the Economics course (Eleje et al., 2020) or by



notably improving their language proficiency while also fostering social skills (Fadzil & Said, 2021; Ahmad et al., 2013; Patra et al., 2022).

Higher education found that most of the research related to the effect of feedback on improving academic performance. Most focused on academic writing and all general subjects, while research was found in English as a second and foreign language, Physical Education, Nursing and Psychology. The majority of research recorded a significant effect of teacher feedback on enhancing students' academic performance since it helped them improve their writing (Denton, 2014; Yamalee & Tangkiengsirisin, 2019; Wahyuningsih, 2020) and indirectly affected their academic performance by promoting their learning engagement (Wang & Zhang, 2020). In addition, three studies demonstrated that students' initial performance influenced the effectiveness of teacher feedback on their future academic performance (Zimbardi et al., 2017; Baranczyk & Best, 2020; Mackinney et al., 2021). Finally, two studies were identified where the effect of oral and written feedback on learners' academic performance was small and did not affect learners' grades (Morris & Chikwa, 2016; Mackinney et al., 2021). Also, regarding the effect of different types of feedback on academic performance, researchers have demonstrated the contribution of electronic (Denton, 2014; Zimbardi et al., 2017), corrective (Wahyuningsih, 2020), oral (Mackinney et al., 2021) and summative feedback (Younis et al., 2021) in improving learners' academic performance through communication and clear learning objectives. Of course, a study showed that providing oral and written feedback did not affect the student's grades (Morris & Chikwa, 2016).

## 8. Conclusions

The present systematic review was conducted across 7 bibliographic databases, initially yielding 125 studies. Using the revised PRISMA 2020 statement, duplicate studies were removed. A two-level screening process was then conducted, with studies being excluded based on title, abstract, criteria, non-access to full text, and completeness of quality criteria. Ultimately, 19 studies were included, which addressed the research questions. These studies were conducted between 2013 to 2023 on an international scale, with the majority originating from countries in Asia. They primarily focused on higher education, secondarily on secondary education, and to a lesser extent on primary education.

The studies used various research methods, with action research being the most common, involving sample sizes ranging from 60 to 527. This was followed by mixed research, which had sample sizes of 10 to 4,000 people, and qualitative research, which involved 6 to 36 participants. Only one study used a quantitative method for data collection. Most of the research focused on teaching English as a second or foreign language, with an emphasis on academic writing and other subjects.

Several studies have been conducted to examine the impact of different types of feedback on academic performance in primary, secondary, and higher education. In primary education, two studies looked at Language and Mathematics subjects and found that specific types of feedback (descriptive and corrective) significantly improved students' academic performance. This research provides valuable insights for educators on how to enhance student performance. In secondary education, eight studies focused on subjects and academic performance of learners of English as a second language and as a foreign language. The majority of the research confirmed the significant effect of teacher feedback in improving students' academic performance and final grades, particularly in areas such as corrective, oral, and written feedback. In higher education, the largest number of surveys was related to academic writing across all general subjects. Most of these studies showed that teacher feedback had a significant effect on enhancing students' academic performance and improving their writing skills. Various types of feedback, including electronic, corrective, oral, and summative feedback, were found to contribute to improved academic performance. Additionally, three studies concluded that initial student performance affects the effectiveness of teacher feedback on future academic performance.

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Obtained.

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**Data availability statement**

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

**Data sharing statement**

No additional data are available.

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